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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/854,937	05/15/2001	Yu Wang	839-1016	7948

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EXAMINER

LE, DANG D

ART UNIT PAPER NUMBER

2834

DATE MAILED: 10/21/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/854,937

Applicant(s)

WANG ET AL.

Examiner

Dang D Le

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on 06 September 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 23-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4. 6) ☐ Other: \_\_\_\_\_

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## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election without traverse of claims 1-23 in Paper No. 8 is acknowledged.
2. Claims 24-30 withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected group II, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 8.

### *Specification*

3. The abstract of the disclosure is objected to because it contains the word "comprising" in line 2. Correction is required. See MPEP § 608.01(b).
4. The disclosure is objected to because of the following informalities: insert the appropriate U. S. Patent Application Serial Numbers in pages 1-3.

Appropriate correction is required.

### *Claim Objections*

5. Claims 6, 9 and 16 are objected to because of the following informalities:
  - Claim 6, line 5, delete "(".
  - Claim 9, lines 3-4, delete the note.
  - Claim 16, line 2, delete "(".Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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7. Claims 1-8 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. There is insufficient antecedent basis for the following limitations in the claims.

Claim 1 recites the limitation "said coil side sections" in line 7. Claim 6 recites the limitation "said coil side sections" in lines 3 and 5.

Regarding claim 20, it is not clear what is "formed partially . . ." is.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-6, 9-14 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Laskaris et al.

Regarding claim 1, Laskaris et al. show in a synchronous machine, a rotor (Figure 2) comprising:

- A rotor core (14);
- a super-conducting coil (20) mounted on said rotor core;
- A vacuum housing (88) covering at least one of said coil side sections, and
- A conductive shield (90) over said vacuum housing and coil side sections.

Regarding claim 2, it is noted that Laskaris et al. also show said vacuum housing (88) being a channel housing extending longitudinally along said rotor core.

Regarding claim 3, it is noted that Laskaris et al. also show the conductive shield being formed of a copper alloy or aluminum.

Regarding claim 4, it is noted that Laskaris et al. also show a rotor end shaft (Figure 3) having a collar and a slot (36) in the collar, wherein the vacuum housing (88) being sealed to the slot and an end section of the coil extends into the slot.

Regarding claim 5, it is noted that Laskaris et al. also show a vacuum around said coil and defined by the vacuum housing and slot in the collar.

Regarding claim 6, it is noted that Laskaris et al. also show a planar surface extending longitudinally across the rotor core, wherein one of said coil side sections is adjacent the planar surface, and said vacuum housing straddles the one of said side sections, and the side section is sealed to the planer surface.

Regarding claim 9, it is noted that Laskaris et al. also show a rotor comprising:

- A rotor core (14, Figure 2) having an axis;
- An end shaft (42) extending axially from an end of said core, wherein said end shaft has a slot (Figure 3) adjacent the core end;
- A super-conducting rotor coil (20) having at least one coil side parallel to the core axis and at least one coil end transverse to said core axis, wherein said coil end extends through said slot in the end shaft (Figure 3);
- A vacuum housing (88) over said coil side and seal with said slot to define a vacuum region around said coil.

Regarding claim 10, it is noted that Laskaris et al. also show a conductive shield over said coil side.

Regarding claim 11, it is noted that Laskaris et al. also show said vacuum housing being a channel straddling said coil side and sealed to said rotor core on both sides of said coil side.

Regarding claim 12, it is noted that Laskaris et al. also show said vacuum housing comprising side-walls on either side of said coil side, and each sidewall being sealed to a surface of the rotor core.

Regarding claim 13, it is noted that Laskaris et al. also show said surface of the rotor core being slotted to receive said sidewalls.

Regarding claim 14, it is noted that Laskaris et al. also show said surface of said rotor core being planar adjacent said coil side.

Regarding claim 17, it is noted that Laskaris et al. also show a rotor (Figure 2) comprising:

- A rotor core (14) having an axis;
- A pair of end shafts (42) extending axially from opposite ends of said core, wherein said end shafts each have a slot adjacent the core end;
- A super-conducting rotor coil (20) having at least one coil side section parallel to the core axis and adjacent opposite sides of said core, and said coil having coil end sections transverse to said core axis and adjacent the ends of said core, wherein said coil end sections each extend through one of said slots in the end shafts (Figure 3);
- A vacuum housing (88) over each said coil side sections and having ends each being sealed to one of slots, and

- A vacuum region around said coil defined by said the slot in said pair of end shafts and the vacuum housing over each of said coil side sections.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Laskaris et al. in view of Khutoretsky et al.

Regarding claim 7, Laskaris et al. show all of the limitations of the claimed invention including the vacuum vessel being stainless steel except for the shield being a copper alloy.

Khutoretsky et al. show the shield (11) being a copper alloy for the purpose of reducing resistance.

Since Laskaris et al. and Khutoretsky et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to make the shield of a copper alloy as taught by Khutoretsky et al. for the purpose discussed above.

13. Claims 8, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laskaris et al. in view of Laskaris.

Regarding claim 8, Laskaris et al. show all of the limitations of the claimed invention except for a plurality of braces buttressing the vacuum housing and conductive shield.

Laskaris shows a brace buttressing the conductive shield for the purpose of stiffening the structure.

Since Laskaris et al. and Laskaris are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use a plurality of braces buttressing the vacuum housing and conductive shield as taught by Laskaris for the purpose discussed above.

Regarding claim 15, it is noted that Laskaris also shows a brace adjacent said vacuum housing and attached to the rotor core.



Regarding claim 16, it is noted that Laskaris et al. also show an electromagnetic shield.

14. Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laskaris et al. in view of Shoykhet.

Regarding claim 18, Laskaris et al. show all of the limitations of the claimed invention including a conductive shield over said coil side sections but not overlapping with said end shafts.

Shoykhet shows a vacuum housing overlapping with said end shafts for the purpose of sealing the rotor.

Since Laskaris et al. and Shoykhet are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to make conductive shield overlapping the end shafts as taught by Shoykhet for the purpose discussed above.

Regarding claim 19, it is noted that Laskaris et al. also show said shield being a cylinder around said core.

Regarding claim 20, it is noted that Laskaris et al. also show said (shield?) being formed partially by a top portion said vacuum housing.

15. Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laskaris et al. in view of Borden.

Regarding claim 21, Laskaris et al. show all of the limitations of the claimed invention except for said shield being an arced strip extending a length of said core and extending only partially around a circumference of said core.

Borden shows said shield (60) being an arced strip extending a length of said core and extending only partially around a circumference of said core for the purpose of clamping the core.

Since Laskaris et al. and Borden are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to make said shield as an arced strip extending a length of said core and extending only partially around a circumference of said core as taught by Borden for the purpose discussed above.

Regarding claim 22, it is noted that Borden also shows said arced strip and a second arced strip each cover one of said coil side sections.

16. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Laskaris et al. in view of Shoykhet as applied to claim 18 above, and further in view of Laskaris.

Regarding claim 18, the rotor of Laskaris et al. modified by Shoykhet includes all of the limitations of the claimed invention except for braces adjacent said vacuum housing, attached to a surface of said rotor core and supporting said shield.

Laskaris shows a brace adjacent said shield and supporting said shield for the purpose of strengthening the structure.

Since Laskaris et al., Shoykhet and Laskaris are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to include braces adjacent said vacuum housing, attached to a surface of said rotor core and supporting said shield as taught by Laskaris for the purpose discussed above.


***Information on How to Contact USPTO***

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dang D Le whose telephone number is (703) 305-0156. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

DDL  
October 13, 2002

A handwritten signature in black ink, appearing to read "Dang D Le", is written over the typed name. The signature is fluid and cursive, with the first name "Dang" being more prominent.